

POSITION DESCRIPTION <i>(Please Read Instructions on the Back)</i>	1. Agency Position No.
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25 Description of Major Duties and Responsibilities (See Attached)

INTERDISCIPLINARY POSITION

COMPUTER ENGINEER, GS-854-12/ELECTRONIC ENGINEER, GS-855-12

POSITION DESCRIPTION

This position is located at the Department of the Army Simulation Training and Instrumentation Command (STRICOM), Directorate for Management, Business Operations and Planning Division, Information Systems Branch. Works under the general supervision of the Chief, Information Systems Branch, who assigns tasks and projects, establishes work priorities, underlines broad objectives to be achieved, and maintains general direction and control over accomplishment of work assignments. The responsibilities include, but are not limited to , advising the Director on MIS and ADP security policies and operations; systems analysis, hardware and software evaluation and selection; administration of the STRICOM databases, network communications including DDN and electronic mail, development of software in support of project planning and control. Incumbent is responsible for independently planning and executing assignments. Work is evaluated on the basis of soundness of technical analysis and recommendations, effectiveness of solutions, and timeliness of work accomplishments.

MAJOR DUTIES AND RESPONSIBILITIES

25%

1. Hardware and Data Communications

a. Serves as a Computer Engineer/Electronic Engineer with responsibility for determining computer hardware and software development requirements. Reviews standards and specifications of equipment available from various commercial contractors. Responsible for the preparation of hardware and software plans, statements of work, system specifications, and requests for proposal of STRICOM requirements for local area networks, wide area networks, bridges and gateways between multiple local area networks, multiplexors, modems and other digital communications equipment involved in a STRICOM wide integrated hardware/software system. Formulates plans for life cycle support of selected hardware/software. Evaluates procurement packages.

b. Serves as the STRICOM technical expert on ADP communications. The work involves establishing a system architecture and implementing this architecture throughout STRICOM.

c. Evaluates the impact of ADPE communications security devices on system performance and recommends technical solutions to ADP security problems to include the requirement to provide security devices on the DDN host and other ADPE communications devices such as modems. Plans and coordinates the DA requirement to provide secure voice devices on telecommunication devices.

25%

2. Information Systems and Database Development

- a. Responsible for determining, developing and managing information systems architecture, local area networks, data communications, and automated data processing. Development of centralized database management systems to automate program tasks. Databases required to support, but not limited to, include the STRICOM Management Information Systems Database (STRICOM MIS), Funding database, Personnel Management Information System, Labor Authorization Documents Database, Project Projections Database, Hardware/Equipment Database, Suspense Database, Trouble Desk Database, and the Lead System Engineering Database.
- b. Designs STRICOM computer database systems and maintains database integrity. Provides database and programming support to all STRICOM elements on a customer basis. Identifies and develops applications to eliminate duplication of effort and streamline operations through automated office systems. Recommends changes to existing as well as proposed systems specifications.
- c. Analyzes the needs of functional users for changes to existing ADP products and defines concisely the changes required for planning, execution, and control. Differentiates information of primary significance from that of lesser importance. Designs proposal for changes to reports which are specific and tailored to the needs of STRICOM. These proposed changes are coordinated with the Chief, Business Operations and Planning and other STRICOM staff members.
- d. Responsible for system software integration/user interface, user services, help desk database and assistance, and the development of common user menu systems.
- e. Develops statistical summaries and synthesizes data derived from other ADP systems to manually produce reports as requested (i.e. Projections Database Reports, Actual v Projected Database Reports).

10%

2. Systems Administration

- a. Provides central systems administration support for all STRICOM multi-user systems, as well as the coordination of the STRICOM multi-user systems with other government and private agencies.
- b. Serves as a system administrator for the four 3B2 minicomputers.
- c. Serves as a system administrator for the Novell PC Lan.

20%

3. Hardware/Software Integration

- a. Monitors the status of hardware solutions and software development. Analyzes the integrity of software design and documentation. Validates final software products.
- b. Analyzes hardware and software problem areas to determine system solutions and fixes. Recommends action to be taken to achieve a solution to include architectural changes in system architecture.
- c. Ensures post implementation support for hardware and software. Monitors and evaluates system performance. Troubleshoots system deficiencies and shortcomings.

10%

4. Support of the Defense Data Network

- a. Serves as the systems administrator for the STRICOM Host connection on the Defense Data Network. Responsible for implementing hardware and software architectural changes required to fully support the interaction of the STRICOM local area network and the x.25 packet switching system associated with the DDN. Serves as the central focal point for the establishment of local area networks, electronic mail, data communications and telecommunications capabilities within STRICOM. Coordinates with external agencies for network connection and on-going service on the Defense Data Network (DDN). Provides host administration services for STRICOM DDN hosts, including registering applicable users with the Network Information Center (NIC) for obtaining TAC Access Cards. Installs new users on the local area network and registers users with the Defense Data Network.

10%

5. Preventive Maintenance and User Support

- a. Trouble shoots and analyzes error conditions and system problems in the supporting systems to determine their cause(s) and develops corrections to system parameters and specifications which will prevent the recurrence of these conditions. Serves as liaison with system maintenance contractors to insure system downtime due to unscheduled maintenance is minimized.
- b. Responsible for performing systems initialization; preventive maintenance on multi-user computer systems; and for insuring system backups are performed on a periodic basis.
- c. Provides assistance, training, and on-going support to all STRICOM systems users to ensure proper performance and system integrity. Verification and validation of programs and software are performed regularly.
- d. Provides technical leadership and subject matter expertise to government and industry working groups developing technical applications for use by STRICOM employees.

6. Other Duties As Assigned.

FACTORS

Factor 1. Knowledge Required by the Position:

Knowledge of computer hardware and software engineering principles to comprehend, analyze and evaluate computer architecture, system design specifications, software design, computer programs and computer networking and interfacing.

Knowledge of digital electronics engineering principles to influence the design of an information management system.

Knowledge of application of professional mathematical principles to develop solutions to scientific, technical or mathematical problems.

Knowledge of the acquisition life cycle management process and program management principles and techniques.

Knowledge of mathematics, statistics and other quantitative methods to comprehend, analyze and evaluate computer architecture, system design specifications, software design, computer programs and computer networking and interfacing.

Knowledge of operations research principles to influence the design of an information management system.

Skill in the use of machine and/or higher order programming languages in order to prepare and/or modify programs. Also be versed in such operating systems as UNIX, MS DOS, XENIX, NOVELL, VMS, etc.

Knowledge of a broad spectrum of ADP equipment including Personal Computers (PC's), minicomputers (i.e. 3B2's), Local Area Networks (LAN).

Knowledge of ADP training philosophy and techniques to develop or evaluate contractor developed training packages for new or revised automation systems.

Position requires an extensive knowledge of engineering principles and theory of the type, scope and thoroughness typically acquired through completion of a four-year course of engineering study at the college or university level leading to a Bachelor of Science degree in Math, Physics or Engineering augmented by advanced degrees and/or extensive experience in the technical specialty field. A general knowledge of procurement, program management and financial management is required.

Factor 2. Supervisory Controls

Works under the general direction of Information Systems Branch Chief. The supervisor furnishes general instructions as to the scope of particular projects in the assigned area of responsibility, assigns tasks and projects, establishes work priorities, underlines broad objectives to be achieved, and maintains general direction and control over accomplishment of work assignments. The employee is responsible for independently planning and executing time and staff requirements, along with any exceptional project characteristics that may affect the supervisor's decision regarding priorities, assignments to particular team members, possible shifts of resources, or formation of special purpose teams. The employee plans and organizes the projects, coordinates efforts of the contractor support services members and provides technical advice where problems arise. The employee speaks for STRICOM in coordinating projects on related subsystems, lead programmers, and other information management workers. The employee clears with the supervisor approaches that have potential policy impact. Completed work is reviewed for its effectiveness in meeting user requirements, accuracy of work is reviewed for its effectiveness in meeting user requirements, accuracy of estimated time frames and projected problem areas, and achievement of harmonious relationships in coordinating the project with other groups. Work is evaluated on the basis of soundness of technical analysis and recommendations, effectiveness of solutions, and timeliness of work accomplishments.

Factor 3. Guidelines

Guidelines consist of agency information management standards and policies, precedent system designs, and user procedure handbooks, regulations, and directives. Data for feasibility studies often requires development of special information sources in order to, for example, resolve differences in findings. Often visits are required to observe work processes, evaluate and test software, alternative procedures are devised and tried out in cooperation with user representatives, and/or counterpart information management organizations in other agencies are surveyed to determine prevailing practices. Trends in workload and effect of proposed changes on long-range information management plans and policy must be taken into account.

Factor 4. Complexity

The work includes studies and analyses preliminary to the decision to automate and the work concerns a complex multiple user system. The work is further complicated by having to deal with support contractors and having to evaluate multiple systems. Variations in approach must be considered and specifications developed which will facilitate later modification. The techniques to be employed are at the edge of the state-of-the-art of distributed processing and communications applications.

Factor 5. Scope and Effect

The work involves the analysis, investigation, resolution and testing of a variety of unusual or unique problems affecting the support of local and wide area networks connected to international logistics support systems, multiple information management systems, other government organizations and contractors who provide information to or receive information from STRICOM. The systems developed and maintained are of vital importance to the successful support of all the Army's fielded training devices. The areas of analysis and responsibility include, but are not limited to, resolution of questions in the following areas:

- a. Definition of the many available automation and communication systems to be utilized to maximize the efficiency of operations given the diverse sources and receivers of information that impact on the STRICOM automation system.
- b. The incumbent will define the requirements for and oversee installation, operation, and maintenance of automation systems which permit electronic interchange of information with, but not limited to, Headquarters Department of the Army, Headquarters Army Materiel Command, Headquarters Training and Doctrine Command, the Naval Training Systems Center, and other Army Major Commands. The requirements analysis must consider such factors as establishment of data interchange standards, database dictionary definitions, communications systems and protocols and systems security. The effect of the decisions based upon the incumbent's analyses, is that the nature of the interface with the above listed organizations, for the near and mid-time range, will largely be determined by the quality of the incumbent's recommendations. The standards and agreements established by the incumbent or by groups in which the incumbent is a member will serve as the data interchange standards for the digital transfer of data.

Factor 6. Personal Contacts

Personal contacts are with other engineers, scientists, programmer/analysts, officials and managers at STRICOM, NTSC, ARI, HRED, other Army, Air Force, and Navy commands, along with non-technical professionals with need for technical advice. Contact is also made with contractors, manufacturers and government representatives from both US and foreign entities. In addition to contacts within STRICOM, contacts often take place with computer personnel of other activities, contractor support services personnel and equipment or system software vendors.

Factor 7. Purpose of Contacts

Contacts are to exchange technical information, determine user requirements, troubleshoot, coordinate and advise on work efforts. The incumbent will be expected to formally arbitrate between various high level users of the system who frequently request modifications that conflict with or necessitate adjustments of procedures of other users and persuade affected user personnel to cooperate in meeting deadlines.

Factor 8. Physical Demands

The work is performed in office surroundings, working with online computer equipment with exposed moving parts, such as printers, tape drives, etc., with occasional exposure to energized electrical circuits. The work requires lifting and carrying microcomputer equipment, supplies, documentation, and boxes of computer paper weighing up to 55 pounds. Travel by air/automobile to attend meetings and conferences throughout the United States is required.

Factor 9. Work Environment

The work is performed in a typical government office setting.

NON-CRITICAL ACQUISITION POSITION AMENDMENT TO PD# 88340

"The employee must meet DoD 5000.52-M requirements applicable to the duties of the position."